

REMARKS

Entry Of Amendment

As Applicants are filing a RCE herewith, this amendment should be entered and considered at this time.

Applicants will address each of the Examiner's rejections in the order in which they appear in the Final Rejection.

Claim Rejections - 35 USC §103

Claims 20-22, 44, 45, 48, 63, 70 and 74

In the Final Rejection, the Examiner rejects Claims 20-22, 44, 45, 48, 63, 70 and 74 under 35 USC §103(a) as being unpatentable over Arai et al. (US 5,817,366) in view of Grothe et al.¹, Monk (US 4,187,801) and Nagayama et al. (US 5,701,055). This rejection is respectfully traversed.

In the Final Rejection, the Examiner admits that Arai does not disclose some of the claimed limitations of the rejected claims. The Examiner, however, previously contended that it would have been obvious to one of ordinary skill in the art to modify the process of Arai so as to utilize as the evaporation source, the evaporation source of Grothe and to further modify the process of Arai so as to move the substrate and the evaporating sources relative to each other, as allegedly taught by Monk.² Now in the Final Rejection, the Examiner repeats these contentions and adds a further contention that it would have been obvious to one of ordinary skill in the art to modify the process of Arai so as to utilize a shadow mask, as recited in independent Claim 20, in

¹ Applicants assume that this is US Patent No. 3,931,490, as opposed to US 3,391,490 cited in the Final Rejection.

² Applicants respectfully disagree with these contentions by the Examiner.

the claimed fashion. Applicants respectively disagree and submit that this rejection and combination are improper.

More specifically, independent Claim 20 is directed to a method of manufacturing a display device comprising transferring the substrate between chambers, and fixing a mask to the substrate wherein the mask is located between the substrate and the evaporation source, and wherein the substrate is repeatedly moved with respect to the first evaporation source during the evaporation of the first material. These features are advantageous in that adhesion of the EL material to a drive portion (e.g. a portion for driving the evaporation source, the substrate holder, the mask holder or the like) within the chamber can be minimized. See for example, pg. 9, ln 18; pg 10, ln. 3 of the present application.

In contrast, Grothe discloses that “coating of wide surfaces, such as wide, running webs, ribbons and the like by vapor deposition requires high density of the vapor.” See col. 5, lns. 41-43 in Grothe. In addition, Grothe discloses a work surface 21 particularly wide tapes, webs, or the like. See col. 7, lns 9-10. Hence, Grothe does not disclose or suggest transferring a substrate between chambers. Moreover, Grothe discloses “the entire system is in vacuum, that is, enclosed in an evacuated vessel”, and that “movement of the web 21 is preferably continuous”. Col. 3, lns. 62-65. Therefore, Grothe does not disclose or suggest connecting chambers. Grothe also does not disclose or suggest to transfer the web between chambers. Further, Grothe does not disclose a display device. Accordingly, it is clearly not proper to combine Arai and Grothe to try to arrive at the claimed invention.

Additionally, while Monk teaches that, in a process where some wafers are coated from an evaporation source, it is known to move the same wafers and the evaporation source relative to each other, Monk discloses a face-up method in which film formation is performed with the

wafer surface, onto which a film is to be formed, facing upward. See e.g. Fig. 4 in Monk. Monk does not disclose or suggest a face-down method. Further, Monk does not disclose a display device. Therefore, it is clearly not proper to combine Arai and Monk to try to arrive at the claimed invention.

Accordingly, for at least the above-stated reasons, independent Claim 20 and those claims dependent thereon are not disclosed or suggested by the cited references and the combination of references to reject these claims is improper. Therefore, these claims are patentable thereover, and it is respectfully requested that this rejection be withdrawn.

Claims 37, 43, 48, 53, 64 and 75

The Examiner also rejects Claims 37, 43, 48, 53, 64 and 75 under 35 USC §103 as being unpatentable over Arai et al. in view of Bennett (US 2,435,997) and Grothe et al. and Nagayama et al. This rejection is also respectfully traversed.

In the Final Rejection, the Examiner combines Arai, Grothe and Nagayama in the same manner discussed above, and further contends that it would have been obvious to one of ordinary skill in the art to modify the method of Arai so as to move the evaporation source relative to the substrate, as allegedly taught by Bennett.

For at least the reasons discussed above, independent Claim 37 and those claims dependent thereon are patentable over these cited references, and it is respectfully requested that this rejection be withdrawn.

Claims 38, 48, 56, 65 and 76

The Examiner also rejects Claims 38, 48, 56, 65 and 76 under 35 USC §103 as being

unpatentable over Arai et al. in view of Bennett, Grothe et al., Nagayama et al. and Monk. This rejection is also respectfully traversed.

In the Final Rejection, the Examiner combines Arai, Grothe and Nagayama in the same manner discussed above, and further contends that it would have been obvious to further modify the method of Arai with the alleged teachings of Bennett and Monk.

For at least the reasons discussed above, independent Claim 38 and those claims dependent thereon are patentable over these cited references, and it is respectfully requested that this rejection be withdrawn.

Claims 39, 48, 53, 57, 66 and 77

The Examiner also rejects Claims 39, 48, 53, 57, 66 and 77 under 35 USC §103 as being unpatentable over Arai et al. in view of Nagayama et al., Feuerstein et al (US 4,627,989), Bennett, and Yamamoto et al. (US 6,179,923). This rejection is also respectfully traversed.

In the Final Rejection, the Examiner asserts Arai and Nagayama in the same manner discussed above, and further contends that it would have been obvious to one of ordinary skill in the art to modify the method of Arai with the alleged teachings of Feuerstein, Bennett and Yamamoto

For at least the reasons discussed above, independent Claim 39 and those claims dependent thereon are patentable over these cited references, and it is respectfully requested that this rejection be withdrawn.

Claims 40, 48, 58, 67 and 78

The Examiner also rejects Claims 40, 48, 58, 67 and 78 under 35 USC §103 as being

unpatentable over Arai et al. in view of Nagayama et al., Feuerstein et al., Bennett, and Yamamoto et al. or in the alternative over Arai et al. in view of Nagayama et al., Feuerstein et al., Bennett, Monk, and Yamamoto et al. This rejection is also respectfully traversed.

In the Final Rejection, the Examiner combines the references in the same manner discussed above, contends that it would have been obvious to combine these references to arrive at the claimed invention, and contends that undisclosed features would be inherent in the references.

For at least the reasons discussed above, independent Claim 40 and those claims dependent thereon are patentable over these cited references, and it is respectfully requested that this rejection be withdrawn.

Claim 49

The Examiner also rejects Claim 49 under 35 USC §103 as being unpatentable over Arai et al. in view of Grothe et al., Monk and Nagayama et al. and further in view of Spitzer et al. (US 5,258,325). This rejection is also respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Claims 54, 68, 71 and 79

The Examiner also rejects Claims 54, 68, 71 and 79 under 35 USC §103 as being unpatentable over Arai et al. in view of Nagayama et al., Bennett, Grothe et al. and Yamamoto et al. This rejection is also respectfully traversed.

In the Final Rejection, the Examiner combines the references in the same manner discussed above, contends that it would have been obvious to combine the references to arrive at the claimed invention, and contends that the undisclosed features would be inherent in the references or obvious.

For at least the reasons discussed above, independent Claim 54 and those claims dependent thereon are patentable over these cited references, and it is respectfully requested that this rejection be withdrawn.

Claims 55, 69, 72 and 80

The Examiner also rejects Claims 55, 69, 72 and 80 under 35 USC §103 as being unpatentable over Arai et al. in view of Nagayama et al., Bennett, Grothe et al., Monk, and Yamamoto et al. This rejection is also respectfully traversed.

In the Final Rejection, the Examiner combines the references in the same manner discussed above, contends that it would have been obvious to combine these references to arrive at the claimed invention, and contends that undisclosed features would be inherent in the references.

For at least the above-stated reasons, independent Claim 55 and those claims dependent thereon are patentable over these cited references, and it is respectfully requested that this rejection be withdrawn.

Claim 59

The Examiner also rejects Claim 59 under 35 USC §103 as being unpatentable over Arai et al., in view of Nagayama et al., Bennett and Grothe et al; further in view of Spitzer et al. This

rejection is also respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Claim 60

The Examiner also rejects Claim 60 under 35 USC §103 as being unpatentable over Arai et al., in view of Nagayama et al., Bennett, Grothe et al. and Monk, further in view of Spitzer et al. This rejection is also respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Claim 61

The Examiner also rejects Claim 61 under 35 USC §103 as being unpatentable over Arai et al., in view of Nagayama et al., Feuerstein et al., Bennett, and Yamamoto et al., further in view of Spitzer et al. This rejection is also respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Claim 62

The Examiner also rejects Claim 62 under 35 USC §103 as being unpatentable over Arai

et al., in view of Nagayama et al., Feurestein et al., Bennett and Yamamoto et al., or in the alternative over Arai et al., in view of Nagayama et al., Feuerstein et al., Bennett, Monk and Yamamoto et al., further in view of Spitzer et al. This rejection is respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Claim 73

The Examiner also rejects Claim 73 under 35 USC §103 as being unpatentable over Arai et al. in view of Grothe et al., Monk and Nagayama et al., further in view of Mizutani et al. (US 6,326,726). This rejection is respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Claims 81-88 and 92-100

The Examiner also rejects Claims 81-88 and 92-100 under 35 USC §103 as being unpatentable over Arai et al. in view of Grothe et al., Monk and Nagayama et al. This rejection is respectfully traversed.

In the Final Rejection, the Examiner combines the references in the same manner discussed above, contends that it would have been obvious to combine these references to arrive at the claimed invention, and contends that undisclosed features would be inherent in the references.

For at least the above-stated reasons, independent Claims 81, 85, 92, 95 and 98 and those claims dependent thereon are patentable over these cited references, and it is respectfully requested that this rejection be withdrawn.

Claims 89-91

The Examiner also rejects Claims 89-91 under 35 USC §103 as being unpatentable over Arai et al. in view of Grothe et al., Monk and Nagayama et al. This rejection is respectfully traversed.

In the Final Rejection, the Examiner combines the references in the same manner discussed above, contends that it would have been obvious to combine these references to arrive at the claimed invention, and contends that undisclosed features would be inherent in the references.

For at least the above-stated reasons, independent Claim 89 and those claims dependent thereon are patentable over these cited references, and it is respectfully requested that this rejection be withdrawn.

Claim 101

The Examiner also rejects Claim 10 under 35 USC §103 as being unpatentable over Arai et al. in view of Grothe et al., Monk and Nagayama et al., further in view of Spitzer. This rejection is respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Therefore, it is respectfully submitted that the §103 rejections have been overcome, and it is requested that the rejections be withdrawn, and the claims allowed.

New Claims

Applicants are also adding new Claims 102-140 herewith.

New dependent Claims 102, 105, 108, 111, 114, 117, 120, 123, 126, 129, 132, 135 and 138 recite the feature that the substrate is located above the first evaporation source, and wherein the first material is formed on a lower surface of the substrate. This feature is performed with the substrate surface onto which a film is to be formed, facing downward. As a result, adhesion of refuse (dirt) or the like can be suppressed. This feature is supported, for example, at pg. 12, lns. 13-20 of the present application.

Applicants note that the independent claims recite the feature of “evaporating a first material from said first evaporation source to deposit said first material over the substrate” (emphasis added). The term “over” in these claims should not be limited to requiring that the first evaporation source be physically above the substrate. The term “over” can also mean covering the substrate. Such a meaning is consistent with the specification for the application as filed which discloses on pg. 12, lns. 12-20 performing this feature with the substrate in a face down method. Hence, the independent claims can be interpreted to mean that the first evaporation source can be located above or below the substrate.

New dependent claims 102, 105, 108, 111, 114, 117, 120, 123, 126, 129, 132, 135 and 138 are consistent with this interpretation and the application in reciting that “wherein the substrate is located above the evaporation source, wherein the first material is formed on a lower surface of the substrate.”

New dependent, Claims 103, 106, 109, 112, 115, 118, 121, 124, 127, 130, 133, 136 and 139 recite the feature that a lower surface of the substrate is provided with thin films. This feature is supported, for example, at pg. 5, lns. 2-5 of the present application.

New dependent, Claims 104, 107, 110, 113, 116, 119, 122, 125, 128, 131, 134, 137, and 140 recite the feature that a lower surface of the substrate is provided with a transparent conducting film. This feature is supported, for example, at pg. 12, lns. 9-11 of the present application.

In addition to the features recited in the claims, each of these dependent claims is patentable for at least the reasons discussed herein for the independent claims.

Therefore, it is requested that these new claims be entered, examined and allowed at this time.

If any fee is due for these new claims, please charge our deposit account 50/1039.

Information Disclosure Statement

Applicants filed an Information Disclosure Statement (IDS) on August 11, 2005. Applicants are also preparing a further IDS which will be filed shortly. It is respectfully requested that these IDSs be entered and considered prior to the issuance of any further action on this application.

If any further fee is due for this IDSs, please charge our deposit account 50/1039.

Conclusion


Accordingly, for at least the above-stated reasons, Applicants respectfully submit that the present application is in a condition for allowance and should be allowed.

If any further fee is due for this amendment, please charge our deposit account 50/1039.

Favorable reconsideration is earnestly solicited.

Respectfully submitted,

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